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CUSTOMER INTENTION TO ADOPT QR CODE FOR PAYMENT: EMPIRICAL RESEARCH IN HCM CITY, VIETNAM

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The goal of this paper is to identify the key factors that directly and indirectly influence customers' willingness to accept QR code payments. The proposed model was a hybrid of the TAM and UTAUT models. We surveyed citizens who have had relevant knowledge about QR code payment (potential customers) and are currently living and working in Ho Chi Minh City, with the official sample size being 505. By applying the exploratory factor analysis EFA, confirmatory factor analysis CFA, structural equation modeling SEM, we found that All hypotheses were accepted, as a result, factors impacting positively attitude towards adopting the QR code payment are organized from high to low: facilitating conditions, security, trust, perceived ease to use, and perceived usefulness. Moreover, customers' intention to adopt the QR code payment was positively influenced by 2 factors are organized from high to low: personal innovativeness and attitude towards adopting the QR code payment. Finally, we also showed some managerial implications to help providers of the QR code payment increase customer's intention to adopt the QR code payment.

Keywords: QR code payment, intention to adopt, attitude, personal innovativeness.

JEL Classifications: M10

1. Introduction

The outbreak of the Covid-19 epidemic has seriously affected the global economy, including Vietnam (Minh Khue, 2021). But if you look at it from another perspective, the Covid-19 epidemic is an opportunity for strongly developing digital payments (Hai Dang, 2021). According to the Payment Department of the State Bank of Vietnam, by the end of the first quarter of 2021, despite being affected by the epidemic, non-cash payments continued to record high growth: transactions through the Internet channel reached 8.1 million billion VND

accounted for increasing 28.4% compared with the same period in 2020; similarly, transactions via mobile phone channel reached more than 4.6 million billion VND accounted for increasing 103%; transactions via QR code channel reached 4.479 billion VND accounted for increasing 146% (Anh Hong & Le Thanh, 2021). This means that despite strong growth, the total transaction value via the QR Code channel is the lowest among the non-cash payment methods mentioned. Moreover, the internet and smartphone have become embedded in every aspect of Vietnamese day-to-day lives with 68.72

million people were using the Internet, and 96.9% of Internet users aged 16 to 64 owned smartphones (We Are Social & Hootsuite, 2021). Therefore, it seems to have many chances for the development of QR code payment in the future. This leads that providers of the QR code payment currently affirm that currently identifying factors affecting intention to adopt QR code payment is an urgent requirement of this service.

In recent years, some researchers have been aware of the QR code payment service. Yan et al. (2021) applied the Mobile Technology Acceptance Model and found that mobile usefulness and optimism positively impact behavioral intention to adopt the QR code payment in Malaysia. Liébana-Cabanillas et al. (2015) showed that attitude, innovation, and subjective norms are key factors significantly affecting the future intention to use the QR code payment, and perceived usefulness had a significant positive relationship with attitude towards the use of QR code payment. Imani & Anggono (2020) researched factors influencing customers acceptance of using the QR code feature in offline merchants for generation Z in Bandung through proposing the new produced conceptual framework of Extended UTAUT2 and their result was that facilitating conditions, hedonic motivation, and performance expectancy positively influence to the behavioral intention which had a positive correlation with actual use. However, in Vietnam, the study about QR code payment is still limited as this service is a new service with new technology for the Vietnamese. Nguyen T. B. T (2021) found that information quality and trust positively affected perceived usefulness, while perceived usefulness and perceived ease of use have a positive impact on the intention to pay with the QR code of office staff in HCM city. By empirical survey on Da Nang city, Mai Q. N. et al. (2019) indicated that decision to use QR code payment was positively affected by customer's attitude, perceived usefulness, and perceived convenience. Nguyen T. T. (2019) also had an empirical survey on Da Nang city and showed that social influences, perceived usefulness, and perceived ease of use had a positive correlation with customer's attitude, and acceptance to use QR code payment was positively impacted by cus-

tomers' attitude, personal innovativeness, and facilitating conditions. Therefore, the research about the direct influences of customers' attitudes toward adopting the QR code payment and personal innovativeness on the intention to adopt the QR code payment has not been analyzed by researchers in Vietnam. Similarly, the impacts of facilitating conditions, security, and customer trust on customers' attitudes toward adopting the QR code payment have not been studied in Vietnam. This means that our paper is an effort to fill the gap and is very necessary and meaningful for providers of the QR code payment, particularly in the context of the Covid-19 epidemic.

In this paper, we firstly proposed a new theoretical model about factors affecting intention to adopt the QR code payment and research hypotheses. Secondly, basing the collected data, we analyzed the exploratory factor analysis (EFA), confirmatory factor analysis (CFA), structural equation modeling (SEM) to test hypotheses and evaluate key factors impacting intention to adopt the QR code payment. Finally, we have some managerial implications to help providers of the QR code payment increase customer's intention to adopt the QR code payment to develop and exploit their potential market for this service.

2. Literature review

2.1. Concept of the QR code payment

Quick Response Code (QR Code) was born in Japan in 1994, which was only for the main purpose of tracking vehicles during the production process, but has quickly been applied to many fields in the world. Currently, the QR code payment feature on the Mobile Banking application allows users to use the camera of their smartphone to scan the QR code to quickly perform many transactions such as bill payment, purchase, transfer, etc. With the QR Code application, banks can expand the network of payment acceptance units even very small shops or carrying street goods, without the cost of installation, operation, control of ATM, POS (Ha An, 2021).

2.2. The intention to adopt the QR code payment

The intention to adopt the QR code payment has been studied by using different theoretical models and multiple variables. The concept of behavioral intention was defined on the TAM (Davis, 1989), the

TRA (Fishbein & Ajzen, 1975), and the UTAUT (Venkatesh et al., 2003). Venkatesh et al. (2003) indicated that the customer intention concerns customers tending to adopt and use the latest technology. Fishbein & Ajzen (1975) showed that behavioral intention can be explained by the attitude toward behavior that is defined as an individual positive and negative feelings about behaving in a particular way. Moreover, Davis (1989) stated that behavioral intention can be explained by attitude toward a system.

In this paper, the intention to adopt the QR code payment concerned potential customers who tend to accept the new payment by using the QR code.

2.3. The research model and Hypotheses

Our proposed model was built based on combining the TAM and UTAUT models as well as previous researches (figure 1).

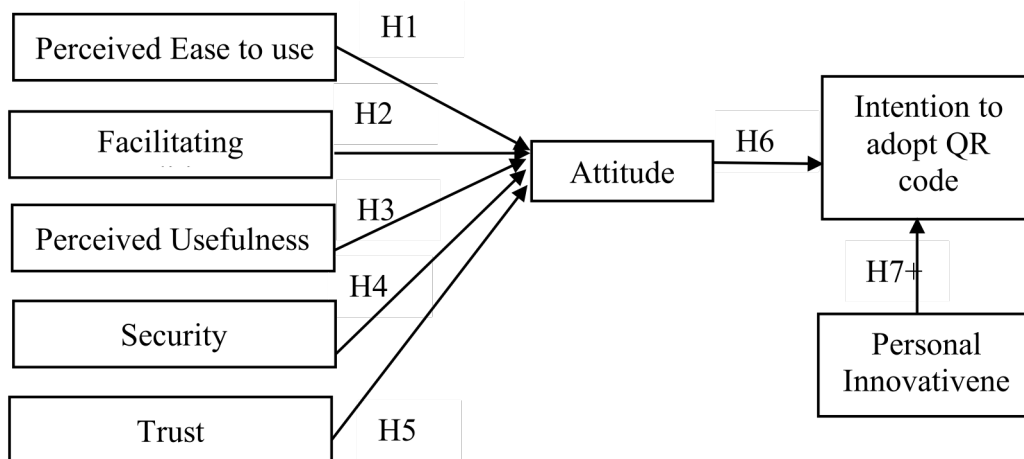


Figure 1: The proposed research model

- Perceived ease to use (PE): in the TAM model, Davis (1989) is defined PE as “the user's belief on the degree of user-friendliness of a particular technology” and it is an important factor affecting attitude towards the use of information technologies (Venkatesh, 2000). Alswaigh & Aloud (2021) indicated that PE significantly and positively impacted user attitude toward adopting mobile wallet services (QR code payment is one of the mobile wallet services). Liébana-Cabanillas et al. (2015) also proposed in their model that PE had a positive relationship with attitude towards the use of QR mobile payment system. Therefore, we hypothesize:

H1: Perceived ease to use has a positive relationship with customer attitude toward adopting QR code payment.

- Facilitating conditions (FC): In the UTAUT model, facilitating conditions are defined as the degree of technical and organizational infrastructure which supports customers to use the system (Venkatesh et al., 2003). Alswaigh & Aloud (2021) and Chawla & Joshi (2019) found that FC significantly and positively impacted user attitudes toward adopting mobile wallet services. Thus, the hypothesis is as follow:

H2: Facilitating conditions have a positive relationship with customer attitude toward adopting QR code payment.

- Perceived usefulness (PU): customers' perceived usefulness concerns customers' belief that

new and particular technology brings benefits for them (Davis, 1989) and PU plays a vital role in attitude towards intended use (Liébana-Cabanillas et al., 2014). Alswaigh & Aloud (2021) found that PU significantly and positively impacted user attitudes toward adopting mobile wallet services. Liébana-Cabanillas et al. (2015) also indicated that PU positively impacted attitude towards the use of QR mobile payment system. Hence, we hypothesize:

H3: Perceived usefulness has a positive relationship with customer attitude toward adopting QR code payment.

- Security (SE): Chawla & Josh (2019) indicated that security concerns customers' belief that they will be safe when they make online payments and SE positively affects customer attitude to adopt mobile wallet services. Many authors also showed that there was a positive relationship between security and attitude (O'Cass & Fenech, 2003; Vijayasarathy, 2004; Alswaigh & Aloud, 2021). Therefore, the hypothesis is as follow:

H4: security has a positive relationship with customer attitude toward adopting QR code payment.

- Trust (TR): Benamati et al. (2010) showed that trust occurred when customers believed in the three dimensions of providers, including ability, integrity, and benevolence. Some researches indicated that there was a positive relationship between trust and attitude (Agag & El-Masry, 2016; Chawla & Joshi, 2019; Alswaigh & Aloud, 2021; etc). Hence, we hypothesize:

H5: Customer trust has a positive relationship with customer attitude toward adopting QR code payment.

- Personal Innovativeness (PI): Agarwal & Prasad (1998) indicated that PI concerns personal willingness to explore new technology. Some researchers indicated that personal is a key factor positively affecting customer intention (Zhang et al., 2018; Makki et al., 2016; Wang et al., 2014, etc). Slade et al. (2015), Liébana-Cabanillas et al. (2015), and Yan et al. (2021) found that PE has a positive relationship with customer intention to use QR codes mobile payment. Thus, the hypothesis is as follow:

H6: Personal innovativeness has a positive relationship with customer intention to adopt QR code payment.

- Attitude (AT): the TAM model proposes that AT can explain customer intention (Davis, 1989). AT concerns customers' positive or negative emotions and feelings when they adopt new technology (Davis, 1989), and the customer intention concerns customers tending to adopt and use the latest technology (Venkatesh et al., 2003). Chawla & Joshi (2019) indicated that attitude positively affected customer intention to adopt mobile wallets. Alswaigh & Aloud (2021) found that customer attitude toward adopting mobile payment services

directly and positively impacted customer intention to adopt mobile payment services. Moreover, Liébana-Cabanillas et al. (2015) also showed that intention to use QR code mobile payment was positively impacted by customer attitude. Hence, we hypothesize:

H7: Customer attitude has a positive relationship with customer intention to adopt QR code payment.

3. Research methodology

Our study combines qualitative research and quantitative research. For qualitative research, we firstly built and strengthen a theoretical research model through direct discussions with some experts in the banking sector as well as referring to the same field researches previously published. For quantitative research, we identify and measure factors affecting potential customers' intention to adopt the QR code payment. All scales in this study are multivariate scales. We use a 5-Point Likert Scale: 1 being completely disagreed, 2 being disagreed, 3 being neutral, 4 being agreed and 5 being completely agreed. The scale in the study is presented in detail in Table 1 below.

The convenient method and online survey were used for data collection with detailed questionnaires based on past studies, and the survey subjects being people who have had relevant knowledge about QR code payment (potential customers) and are currently living and working in Ho Chi Minh City. According to Hair et al. (2010), the minimum sample size for analyzing the structural equation modeling (SEM) with over 7 factors is 500. Therefore, with 8 factors in the research model, we decided that the sample size applied in this study was 540. After surveying, we had approximately 96.3%% of the collected data. Of those returned, approximately 2.88% were incomplete. Thus, the analysis is based on the 505 usable surveys and represents a response rate of 93.52% of the distributed survey.

4. Results and discussion

4.1. Sample Description and data description of variables

Table 2 shows our sample description. The total number of participants was 505 with 274 males. The majority of participants were in 2 age groups: 26-35 (37.03%) and 18-25 (32.08%). Most respondents graduated from university (68.12%) and the small-

Table 1. *Summary of research scale*

Variables	Items	Measurement	Sources
Perceived ease to use (PE)	PE1	It is easy for me to become skillful at using the QR code payment	<u>Alswaigh & Aloud (2021), Liébana-Cabanillas et al. (2015)</u>
	PE2	It is easy for me to follow all the steps to use the QR code payment	
	PE3	I feel that interaction with QR code payment is clear and understandable.	
	PE4	I think that using QR code payment requires minimum effort.	
	PE5	Overall, I think QR code payment is very easy to use	
Facilitating conditions (FC)	FC1	My smartphone is appropriate for using a QR code payment	<u>Alswaigh & Aloud (2021), Chawla & Joshi (2019)</u>
	FC2	The cost of purchasing a smartphone being suitable for using QR code payment is affordable to me	
	FC3	My knowledge is enough to use QR code payment	
	FC4	I can easily find a person who can help me use QR code payment whenever I need	
Perceived usefulness (PU)	PU1	I believe QR code payment would be useful for conducting online transactions.	<u>Alswaigh & Aloud (2021), Liébana-Cabanillas et al. (2015)</u>
	PU2	Using QR code payment makes the handling of payments easier	
	PU3	Using QR code payment improves my productivity in purchasing	
	PU4	Using QR code payment would enable me to accomplish transactions more quickly	
Security (SE)	SE1	I will be confident making payments via QR code payment	<u>Alswaigh & Aloud (2021), Chawla & Joshi (2019)</u>
	SE2	I believe QR code payment's technology is very secure	
	SE3	I believe that transactions conducted via QR code payment are secure	
	SE4	I believe the risk of losing money for using QR code payment is low	
	SE5	I believe QR code payment is safer than traditional payments	
Trust (TR)	TR1	I trust the providers of QR code payment will not divulge any of my information to third party	<u>Alswaigh & Aloud (2021), Chawla & Joshi (2019)</u>
	TR2	I believe that the QR code payment provider will always provide me with assistance	
	TR3	I believe QR code payment service keeps its promises and commitments	
	TR4	I believe QR code payment service keeps customers' interests best in mind	
	TR5	I trust QR code payment systems to be secure	
Personal Innovativeness (PI)	PI1	I like to experiment with new technology.	<u>Slade et al. (2015), Liébana-Cabanillas et al. (2015), Yan et al. (2021)</u>
	PI2	Among my peers/ colleagues, I am usually the first to explore new technology	
	PI3	If I heard about new technology, I would look for ways to experiment with it.	
	PI4	Overall, experimenting with new technology is my hobby	

Attitude (AT)	AT1	I feel using QR code payment is a good idea, particularly during the Covid-19 pandemic	Chawla & Joshi (2019), Alswaigh & Aloud (2021), Liébana-Cabanillas et al. (2015)
	AT2	I think that using QR code payment is convenient and easy	
	AT3	I think that using QR code payment is interesting, particularly during the Covid-19 pandemic	
	AT4	I think that using QR code payment is beneficial particularly during the Covid-19 pandemic	
Intention (IN)	IN1	Given the opportunity, I will use QR code payment in the future	Chawla & Joshi (2019), Alswaigh & Aloud (2021), Liébana-Cabanillas et al. (2015)
	IN2	I may use QR code payment in the future	
	IN3	I intend to use a QR code payment when the opportunity arises	
	IN4	I will frequently use QR code payment in future	

Table 2: Sample description

	Items	Frequency	Percentage
<i>Gender</i>	Female	231	45.74
	Male	274	54.26
<i>Age</i>	18-25	162	32.08
	26-35	187	37.03
	36-45	123	24.36
	46-55	33	6.53
<i>Education level</i>	High School	15	2.97
	Intermediate	31	6.14
	College	86	17.03
	University	344	68.12
	Over university	29	5.74
<i>Income</i>	Under 5 million VND	45	8.91
	5 - 10 million VND	247	48.91
	11 - 15 million VND	157	31.09
	Over 15 million VND	56	11.09

Source: The researcher's data analysis

est percentage of ones obtained high school level (2.97%). The majority income was from 5 to 10 million VND (48.91%) and the minority income was under 5 million VND (5.74%).

Table 3 shows that the results also showed that customers agreed with statements related to perceived usefulness, trust, personal innovativeness,

attitude, intention to adopt the QR code payment because all mean values were from 3.4040 to 3.6697. However, they were neutral with statements related to perceived ease to use, facilitating conditions, and security.

Table 3: Data description of variables

	Mean	Std. Deviation	Minimum	Maximum
Perceived ease to use (PE)	3.2701	0.77833	1.20	4.80
Facilitating conditions (FC)	3.3198	0.80129	1.25	5.00
Perceived usefulness (PU)	3.4040	0.89500	1.00	5.00
Security (SE)	3.2487	0.72861	1.00	4.60
Trust (TR)	3.6697	0.73855	1.80	5.00
Attitude (AT)	3.4842	0.87882	1.00	5.00
Personal Innovativeness (PI)	3.4104	0.92703	1.00	5.00
Intention (IN)	3.4554	0.88808	1.00	5.00

Source: The researcher's data analysis

Table 4: The result of the scale reliability test

Variables	Number of observed variables	Number of observed variables after test	Minimum Corrected item-total Correlation	Cronbach's Alpha
Perceived ease to use (PE)	5	4	0.847	0.947
Facilitating conditions (FC)	4	4	0.706	0.876
Perceived usefulness (PU)	4	4	0.817	0.932
Security (SE)	5	4	0.762	0.911
Trust (TR)	5	4	0.712	0.879
Personal Innovativeness (PI)	4	4	0.747	0.920
Attitude (AT)	4	4	0.786	0.920
Intention (IN)	4	4	0.851	0.942

Source: The researcher's data analysis

4.2. Cronbach's Alpha test for reliability of the scale and exploratory factors analysis (EFA)

Table 4 showed that the scales met reliability requirements with the value of Cronbach's Alpha from 0.876 to 0.947 (>0.6) and Corrected item-total Correlation greater than 0.5 (at least 0.706). After eliminating PE5, SE4, and TR2, 32 observed variables consistently measured specific, statistically, and analytically significant.

Table 5 showed the results of EFA. All 32 items loaded on eight factors with Eigenvalues greater than 1; the cumulative percent of 74.335% and

KMO values = $0.944 > 0.5$. Bartlett's test is significant at $p = 0.000 < 0.05$ for the variables measuring eight factors, including perceived ease to use, facilitating conditions, perceived usefulness, security, trust, personal innovativeness, attitude, and intention. The observed variables of factors were strongly correlated and there was no disturbance in the scale.

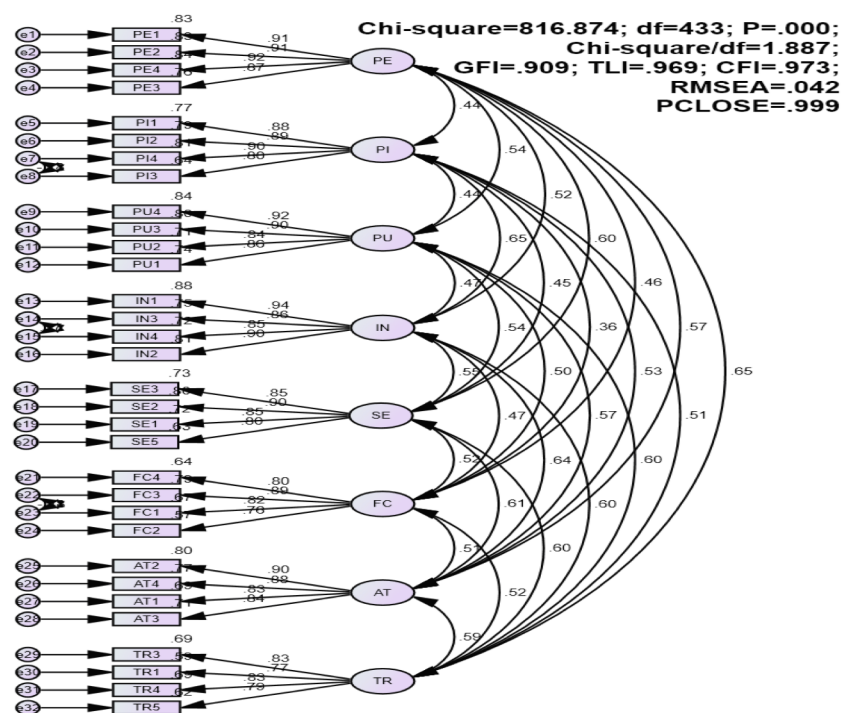
4.3. Confirmatory Factor Analysis (CFA)

From the result of CFA in figure 2, the model fit was good with the data collected, including Chi-square=816.874; $df=433$; $p=0.000 < 0.05$; chi-square/ $df=1.887 < 2$; GFI= 0.909 > 0.9 ;

Table 5: The results of exploratory factors analysis (EFA)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.944
Bartlett's Test of Sphericity	Approx. Chi-Square	14251.705
	Df	496
	Sig.	0.000
Extraction Sums of Squared Loadings	Cumulative %	74.335

Source: The researcher's data analysis



Source: The researcher's data analysis

Figure 2: The results of the confirmatory factor analysis (CFA)

TLI=0.969>0.9; CFI=0.973>0.9; RMSEA=0.042 < 0.08 (Hair et al., 2010) and PCLOSE= 0.999>0.05 (Hu & Bentler, 1999). All the standardized regression weights were over 0.5 ($p = 0.000$), so all observed variables were convergent validity.

Table 6 shows the results of convergent and discriminant validity and reliability tests. The smallest composite reliability (CR) was $0.881 > 0.7$, so all CR scores were well (Hair et al., 2010). The average variance extracted (AVE) values were over 64.9% >50%, thus all the scales were high convergent

(Hair et al., 2010). Moreover, discriminant validity was satisfied as all square roots of the AVE for each factor were greater than the inter-construct correlations and all maximum shared variance MSV were smaller than AVE (Hair et al., 2010).

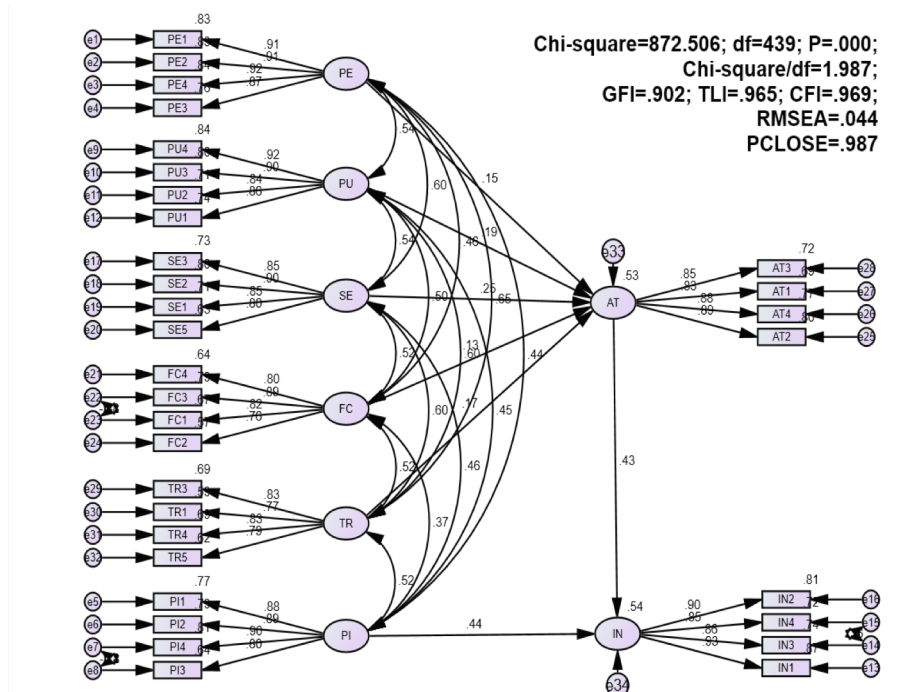
4.4. The Structural Equation Modeling (SEM) and hypothesis test of the proposed model.

Figure 3 illustrated that the SEM was a good fit for the QR code payment service with Chi-square =872.506; df=439; $p=0.000 < 0.01$; Chi-square/df=1.987<2; GFI= 0.902>0.9;

Table 6: Convergent and discriminant validity and reliability tests

	CR	AVE	MSV	SE	PE	PI	PU	IN	FC	AT	TR
SE	0.911	0.719	0.372	0.848							
PE	0.947	0.817	0.417	0.597	0.904						
PI	0.924	0.752	0.417	0.446	0.437	0.867					
PU	0.933	0.776	0.359	0.536	0.536	0.444	0.881				
IN	0.938	0.791	0.417	0.547	0.519	0.646	0.474	0.889			
FC	0.889	0.669	0.276	0.525	0.456	0.358	0.501	0.471	0.818		
AT	0.921	0.744	0.406	0.610	0.569	0.531	0.574	0.637	0.514	0.863	
TR	0.881	0.649	0.417	0.605	0.646	0.506	0.599	0.597	0.521	0.591	0.806

Source: The researcher's data analysis



Source: The researcher's data analysis

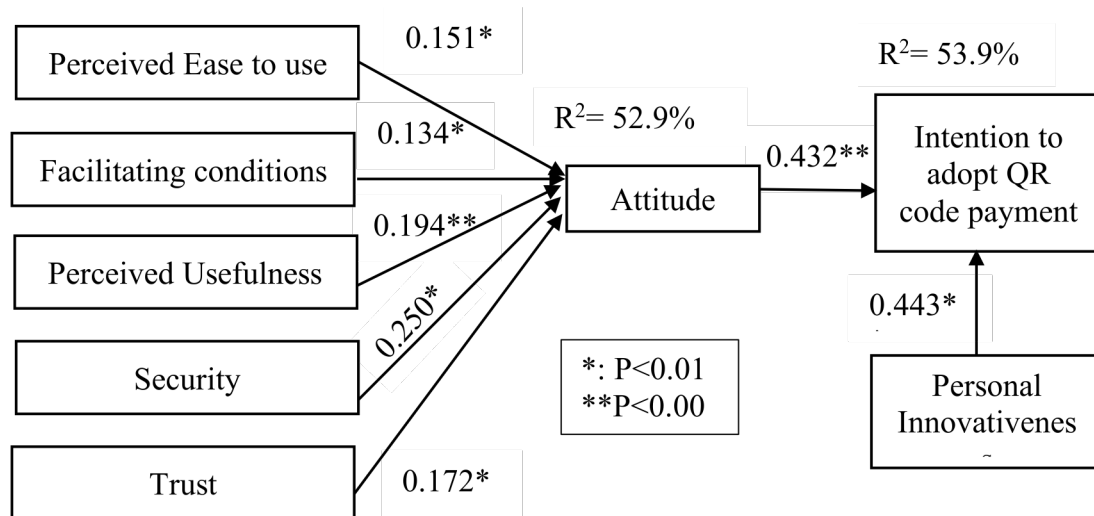
Figure 3: The results of the structural equation modeling (SEM) analysis

TLI=0.965>0.9, CFI=0.969>0.9, RMSEA=0.044<0.08 (Hair et al., 2010), and PCLOSE=0.987>0.05 (Hu & Bentler, 1999). Therefore, we can conclude that the research model was completely consistent with the collected data and statistical significance at a 99% confidence level ($p < 0.01$).

R^2 in figure 4 indicated that perceived ease to use, facilitating conditions, perceived usefulness,

security, and trust accounted for 52.9% of the variance of attitude. Moreover, attitude and personal innovativeness accounted for 53.9% of the variance of intention to adopt the QR code payment.

Table 7 showed that all hypotheses (H1, H2, H3, H4, H5, H6, H7) are accepted. These results also suggest that if providers of the QR code payment increase perceived ease to use, facilitating conditions, perceived usefulness, security, and trust, the



Source: The researcher's data analysis

Figure 4: The SEM's results about standardized regression weights and the squared multiple correlations.

Table 7: Results of the hypothesis test

		P	Standardized Regression Weights	Result
H1 +	PE --> AT	0.003	0.151	Accepted
H2 +	PU --> AT	0.003	0.134	Accepted
H3 +	SE --> AT	0.000	0.194	Accepted
H4 +	FC --> AT	0.000	0.250	Accepted
H5 +	TR --> AT	0.003	0.172	Accepted
H6 +	AT --> IN	0.000	0.432	Accepted
H7 +	PI --> IN	0.000	0.443	Accepted

Source: The researcher's data analysis

potential customer would increase positive attitude towards adopting the QR code payment. Moreover, an increase of positive attitude towards adopting the QR code payment and an increase of the level of personal innovativeness lead to enhance the level of intention to adopt the QR code payment.

The component score coefficient matrix was presented in table 8 below:

5. Conclusions and managerial implications

By combining the TAM and UTAUT models as well as previous researches, our paper proposed a new model for the QR code payment to identify determinants affecting intention to adopt this service of the customers who have had relevant knowledge

about QR code payment (potential customers) and are currently living and working in Ho Chi Minh City. We collected data with the official sample size being 505 and used SPSS 25 and AMOS 20 software for analyzing our collected data. The results affirmed that our proposed model was suitable for the QR code payment, completely consistent with the collected data, and was statistically significant at a 99% confidence level ($p < 0.01$). All hypotheses were accepted, as a result, factors impacting positively attitude towards adopting the QR code payment are organized from high to low: facilitating conditions, security, trust, perceived ease to use, and perceived usefulness. Moreover, customers' inten-

Table 8: *Component Score Coefficient Matrix*

	Component							
	PE	PI	PU	IN	SE	FC	AT	TR
PE1	0.353	-0.004	-0.040	-0.032	-0.068	-0.023	-0.031	-0.037
PE2	0.352	-0.011	-0.021	-0.011	-0.053	-0.013	-0.042	-0.079
PE3	0.357	-0.035	-0.033	0.004	-0.044	-0.016	-0.055	-0.067
PE4	0.344	-0.005	-0.040	-0.040	-0.032	-0.018	-0.019	-0.067
FC1	-0.024	0.030	-0.027	-0.036	-0.055	0.357	-0.061	-0.044
FC2	-0.023	-0.027	-0.062	-0.055	-0.019	0.325	0.001	-0.004
FC3	0.001	-0.018	-0.022	-0.013	-0.024	0.348	-0.067	-0.061
FC4	-0.034	-0.002	-0.048	-0.005	-0.061	0.366	-0.038	-0.036
PU1	-0.048	-0.035	0.329	-0.020	-0.027	0.013	-0.032	-0.051
PU2	-0.043	-0.026	0.360	0.000	-0.048	-0.048	-0.032	-0.048
PU3	-0.018	-0.003	0.343	-0.018	-0.008	-0.074	-0.061	-0.034
PU4	-0.029	-0.034	0.345	0.001	-0.015	-0.023	-0.064	-0.050
SE1	-0.025	-0.043	-0.037	-0.039	0.356	-0.025	-0.027	-0.030
SE2	-0.058	-0.014	0.002	-0.054	0.366	-0.030	-0.032	-0.041
SE3	-0.065	0.019	-0.043	-0.045	0.386	-0.010	-0.058	-0.051
SE5	-0.052	-0.019	-0.020	0.006	0.370	-0.072	-0.059	-0.030
TR1	-0.065	-0.026	-0.085	-0.043	0.000	-0.041	-0.031	0.430
TR3	-0.073	-0.035	-0.052	-0.022	-0.033	-0.033	-0.033	0.429
TR4	-0.072	-0.039	-0.006	-0.051	-0.039	-0.034	-0.003	0.393
TR5	-0.028	0.011	-0.009	-0.052	-0.085	-0.009	-0.029	0.350
AT1	-0.033	-0.039	-0.030	-0.040	-0.057	-0.025	0.376	-0.023
AT2	-0.054	-0.017	-0.051	-0.083	-0.016	-0.038	0.418	-0.027
AT3	-0.021	-0.049	-0.031	-0.014	-0.063	-0.039	0.361	-0.011
AT4	-0.029	-0.009	-0.052	-0.076	-0.029	-0.029	0.390	-0.030
PI1	-0.029	0.362	-0.047	-0.099	-0.023	0.017	-0.044	-0.006
PI2	-0.003	0.358	-0.022	-0.120	-0.021	-0.005	-0.005	-0.049
PI3	-0.030	0.324	0.001	-0.079	0.001	-0.028	-0.038	-0.028
PI4	0.000	0.327	-0.039	-0.063	-0.017	0.001	-0.047	-0.024
IN1	0.006	-0.085	-0.016	0.374	-0.051	-0.015	-0.040	-0.038
IN2	0.001	-0.067	-0.027	0.368	-0.029	-0.003	-0.062	-0.048
IN3	-0.036	-0.060	0.018	0.381	-0.021	-0.031	-0.069	-0.051
IN4	-0.043	-0.073	-0.014	0.381	-0.019	-0.037	-0.048	-0.019

Source: The researcher's data analysis

tion to adopt the QR code payment was positively influenced by 2 factors are organized from high to low: personal innovativeness and attitude towards adopting the QR code payment.

The success of QR code payment relies on multiple parties' participation, including merchants, consumers, network operators, financial services, device manufacturers, and software and technology providers (Liébana-Cabanillas et al., 2015). Therefore, based on empirical results, we propose some implications for providers of the QR code payment in HCM city to increase the level of intention to adopt the QR code payment towards increasing the use level of the QR code payment in the future as follows.

Firstly, because of the most significant correlation between the level of personal innovativeness and the level of intention to adopt the QR code payment, providers of the QR code payment need to focus to affirm that the potential customers are people with a high level of personal innovativeness. Moreover, basing the results of the component score coefficient matrix, they also should make the QR code payment system more secure as the positive correlations of observed variables SE3 and TR5 with PI.

Secondly, providers of the QR code payment need to improve potential customers' attitudes towards adopting the QR code payment by improving facilitating conditions, security, customer trust, perceived ease to use, and perceived usefulness:

Regarding facilitating conditions, as some facilitating conditions are dependent on customers and positively correlate with PI1 and PI4, providers need to focus on potential customers who have smartphones and like to experiment with new technology. Moreover, providers need to have the staff to assist customers at any time, at any point, and under any situation.

Regarding security, providers need to increase the QR code payment security to ensure customers' expectations about safe and secure transactions and guide customers on how to pay via the QR code safely.

Regarding customer trust, providers need to commit not to divulge any of customers' information to the third party and keep customers' interests

best in mind. Moreover, providers need to keep their promises and commitments, particularly in the safe of the QR code payment system.

Regarding perceived ease to use and perceived usefulness, providers of the QR code payment need to improve convenience towards ease to use and speed during the process of payment and focus the market strategy about the QR code payment, especially the promotion of the benefits that the QR code can bring for customers. ♦

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Summary

Mục tiêu bài báo là xác định các nhân tố ảnh hưởng đến ý định chấp nhận thanh toán bằng mã QR của khách hàng. Mô hình nghiên cứu kết hợp 2 mô hình TAM và UTAUT. Chúng tôi đã khảo sát những người có hiểu biết về thanh toán bằng mã QR (khách hàng tiềm năng) hiện đang sinh sống và làm việc tại TP.HCM, với cỡ mẫu chính thức là 505. Bằng cách

áp dụng phân tích nhân tố khám phá EFA, phân tích nhân tố xác nhận CFA, mô hình cấu trúc tuyến tính SEM, chúng tôi chứng minh được các giả thuyết đều được chấp nhận, do đó, các nhân tố tác động tích cực đến thái độ chấp nhận thanh toán bằng mã QR được sắp xếp từ cao xuống thấp: điều kiện thuận lợi, bảo mật, sự tin tưởng, nhận thức về tính dễ sử dụng và nhận thức về tính hữu ích. Hơn nữa, ý định chấp nhận thanh toán bằng mã QR của khách hàng bị ảnh hưởng tích cực bởi 2 yếu tố được sắp xếp từ cao xuống thấp: sự đổi mới của cá nhân và thái độ đối với việc chấp nhận thanh toán bằng mã QR. Cuối cùng, chúng tôi cũng chỉ ra một số hàm ý quản trị để giúp các nhà cung cấp dịch vụ thanh toán bằng mã QR có thể gia tăng ý định chấp nhận thanh toán bằng mã QR của khách hàng.

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